
Meta-analysis of the effects of health promotion intervention in the workplace on depression and anxiety symptoms

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CRD summary

The authors concluded that a broad range of health promotion interventions appeared to be effective for reducing depression and anxiety in the workplace, but the effect was small. While some aspects of this review were well conducted, other limitations make the reliability of the pooled results uncertain.

Authors' objectives

To investigate whether different types of health promotion interventions in the workplace reduce depression and anxiety symptoms.

Searching

MEDLINE and PsycINFO databases, and ProQuest and Web of Science platforms, were searched for English language articles published between 1997 and 2007. Search terms were reported. Key journals and reference lists of relevant publications were also checked.

Study selection

Eligible studies had to evaluate the impact of a workplace health intervention that used valid indicators or standardised measures of depression or anxiety. Indirect interventions that targeted risk factors for depression or anxiety were also included (e.g. smoking, chronic disease, substance abuse, obesity or inactivity, and poor psychosocial work climate). Studies were excluded where an effect size could not be calculated or imputed.

Randomised controlled trials (RCTs), quasi-randomised trials, and pre-post studies were included in the review. Where reported, study follow-up ranged from one month to three years. The participants ranged in age from 19 to 69 years; overall, the proportions of males and females were similar. Most of the participants were working in health, government or community services within North America or Europe. Most direct mental health interventions involved psycho-education with cognitive behaviour or training in coping skills within a stress management framework; indirect mental health interventions generally focused on physical activity, poor work environment and cardiovascular disease.

Two reviewers performed the study selection.

Assessment of study quality

The use of control group and random allocation were considered when assessing the quality of the research design.

It appeared that one reviewer assessed study quality, and a second reviewer independently checked the data. Any disagreements were resolved by consensus.

Data extraction

Mean scores and standard deviations (SDs) were extracted. Where standard deviations were not reported, they were derived from published normative data. When studies included two intervention groups and one control group, the authors calculated effect sizes for each treatment-control comparison.

One reviewer extracted the data from the studies, and a second reviewer independently checked the data. Any disagreements were resolved by consensus.

Methods of synthesis

Meta-analyses examining pooled standardised mean differences (SMDs) and 95% confidence intervals (CIs) were

performed for depression, anxiety, and composite measures. A fixed-effect model was used where there was no evidence of heterogeneity. Heterogeneity was assessed using X^2 and I^2 statistics ($p < 0.1$ and I^2 over 50% indicated heterogeneity).

Sensitivity analyses were conducted using only one comparison from each study.

Subgroup analysis was conducted on direct versus indirect interventions.

Publication bias was assessed using funnel plots.

Results of the review

Twenty-two studies ($n=3,632$ participants) were included in the review (16 RCTs, three quasi-randomised trials, and three pre-post studies). Seventeen studies ($n=2,640$ participants) involving 20 comparisons were included in meta-analyses.

Workplace health interventions demonstrated significant improvements in depression (SMD 0.28, 95% CI 0.12 to 0.44; 11 trials) and anxiety (SMD 0.29, 95% CI 0.06 to 0.53; seven trials); no statistical heterogeneity was found for these analyses. However, they had no effect on composite score outcomes (SMD 0.05, 95% CI -0.03 to 0.13; 13 trials); statistical heterogeneity was present for this analysis.

Sensitivity analysis produced similar results. Subgroup analysis demonstrated that direct mental health interventions had positive effects on depression, whereas indirect interventions did not; all other outcomes were similar between indirect and indirect interventions.

Funnel plots demonstrated a low risk of publication bias.

Authors' conclusions

A broad range of health promotion interventions appeared to be effective for reducing depression and anxiety in the workplace, but the effect was small.

CRD commentary

The review addressed a clear research question, and was purposely supported by broad inclusion criteria. Attempts to identify all relevant studies were undertaken by searching electronic databases and other sources. However, the search was limited to English language publications, which may have introduced language bias. Although the authors assessed publication bias, they did not include unpublished studies, so some studies may have been missed. More than one reviewer was involved in the review process, limiting reviewer error and bias.

Although the review included a large number of RCTs, a comprehensive quality assessment was not reported or considered in the results. Some details of the individual studies were reported, although information on control groups was lacking, so it was not clear what was being compared. Given the clinical heterogeneity between the studies, it is debatable whether or not the studies should be pooled. In addition, it could be argued that combining results from different study designs, or duplicating data from the same study (i.e. from the control group), should not be undertaken.

While some aspects of this review were well conducted, other limitations make the reliability of the pooled results uncertain.

Implications of the review for practice and research

Practice: The authors did not report any implications for practice.

Research: The authors implied that further research on health promotion interventions, including cross-domain interventions, in the workplace to reduce depression and anxiety symptoms would be useful. They recommended that future research reports include information about the theoretical basis of the intervention and the costs of implementing interventions.

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